

Extraction of natural dyes from myrobalan, gallnut and pomegranate, and their application on wool

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ABSTRACT

Due to environmental awareness created among masses worldwide by environmentalist and Green peace activist and hazards of certain synthetics dyes i.e. benzidine and certain azo-dyes producing among 22 types of cancerous amines, people have realized the potential of natural dyes and tried to use them as an alternative to synthetic dyes. Studies were conducted to extract the dye from myrobalan, gallnut and pomegranate and used them on mordanted wool and 27 shades were developed. L* a* b* values and fastness properties were evaluated to determine the use of these dyes on commercial basis.

Introduction

NATURAL dyes are those which are obtained from nature without chemical processing. It may be from insect, vegetable or mineral source. Insect dye includes cochineal, kermes (kirmiz) and lac red dye but here in India we have only lac red dye obtained from *Laccifer lacca*/Kerria lacca. We have plenty of vegetable dyes which are also used as Ayurvedic or Unani medicine. Mineral dyes which are used as natural colourants in the past are ceased to be used presently.

It has property of eco-friendliness i.e. does not create any environmental problem at the stage of production or use and maintains ecological balance. They are non-toxic and non-allergic. It has soothing effect and aesthetic value. In vegetable dye waste products are also used such as onion peel, tea waste, tamarind seed kernel and lac wash.

It is revived almost after a century with the effort of (Late) Smt. Kamala Devi Chattopadhyay at the same time it was also revived in U.S.A., U.K., Japan, New Zealand, Australia and Turkey, in India serious effort have been

started in mid eighties. It generates employment especially to rural folk.

It has tremendous scope in the export of textiles (carpets, durries, blankets, knit wears, suitings, shawls, scarves, ties, sarees, casual wears - shirts & jeans, and other fabrics) and can be used in wool, silk, jute, linen, nylon, cotton and their blends and also in leather products successfully. It can also be used in food and drugs.

Natural dyes have been a part and parcel of men's life since time immemorial. Relics from excavation at Mohanjodaro and Harappa (Indus Valley Civilization), Egyptian Mummies, Ajanta Caves Paintings and Mughal Paintings show the use of natural dyes. In the present study 3 Agricultural produce Myrobalan, Gallnut and Pomegranate have been selected as dye raw material, which are described below:

Harda (Terminalia chebula)/ (Chebulic myrobalan) Harar/ Har

It is the source of one of the most important vegetable tanning materials and has been used in India for a long time as a tanning, mordanting and dyeing material. The dried fruits give natural dye C I Natural Red 5 and C I Natural Brown 6. Cotton cloth is invariably coated with myrobalan extract before any sketching or printing is done on it.

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